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10/527,025	08/02/2005	Antonio Carrus	07040.0214-00000	5441

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EXAMINER	
FISCHER, JUSTIN R	

ART UNIT	PAPER NUMBER
1733	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/527,025	CARRUS ET AL.	
	Examiner	Art Unit	
	Justin R. Fischer	1733	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *26 April 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *19-42* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *19-22,29-34,36-39,41 and 42* is/are rejected.

7)☒ Claim(s) *23-28,35 and 40* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

2. Claim 42 is rejected under 35 U.S.C. 102(a) as being anticipated by Fujita (JP 2002-129055, newly cited). Fujita discloses a temperature indicating assembly comprising a dye substance (organic compound having electron donating and coloring property) and a reactive compound (electron acceptable compound), wherein said components react at a specified temperature, identified as a discoloration temperature. In this instance, the reaction between the above noted components is seen to constitute a chemical reaction. Additionally, the claim as currently drafted is directed to a temperature indicator and thus, does not require a tire construction.

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

4. Claims 19-22, 29, 31-34, and 36-39 are rejected under 35 U.S.C. 103(a) as being unpatentable over Buckland (CA 781,210, of record) and further in view of Robert (GB

1,147,875, of record), Jenke (DE 19643995, newly cited), and Kanakkanatt (US 2005/0087725, newly cited).

Buckland is directed to a pneumatic tire construction having a temperature indicating means arranged on the outer surface of the tire (Page 2, Lines 30+). The reference further teaches that temperature indicating means can be a variety of substances that are supplied by "paint" manufacturers specializing in the heat indicator field (Page 4, Lines 15-18). The reference, however, fails to specifically suggest a temperature indicating means comprising a reactive substance and a dye. Robert, on the other hand, discloses a temperature indicating paint that is precise and easily recognizable- in this instance, Robert is broadly directed to the use of temperature indicating paints (Page 1, Lines 9-30). Given the teachings of Buckland, one of ordinary skill in the art at the time of the invention would have found it obvious to use a wide variety of temperature indicating paints, including the temperature indicating paint of Robert comprising a reactive substance and a dye for the reasons detailed above. It is emphasized that Robert is broadly directed to a temperature indicating paint and the use of such a paint in the tire of Buckland is consistent with the teachings of Buckland to use of temperature indicating means that is supplied by "paint" manufacturers. Lastly, the mechanism of Robert in which the crystallinity of the melt sensitive component is changed such that said dye is soluble is seen to constitute a reaction as required by the claims.

Also, with respect to the independent claim, while Buckland is primarily concerned with monitoring the curing conditions, one of ordinary skill in the art at the

time of the invention would have equally found it obvious to provide a temperature indication during running of the tire (in a cured condition). The general use of temperature indicating compounds to identify specific temperatures is known in the tire industry, as shown for example by Jenke. In this instance, Jenke discloses the use of temperature indicating compounds for targeted applications, such as extremely cold temperatures and high running temperatures (Pages 1 and 2 of translation). Kanakkanatt further recognizes the use of similar temperature indicating paints in cured pneumatic tires (Abstract). One of ordinary skill in the art at the time of the invention would have equally found it obvious to use the temperature indicating paint of Buckland in view of Robert in a cured tire to indicate whether a tire has experienced extremely high running temperatures (which might lead to degradation of tire properties and life). It is emphasized that temperature indicating compounds are commonly used to identify a wide variety of temperatures, including those in the vulcanization process and those during running.

As to claims 20 and 21, Buckland suggests the use of two strips of temperature indicating material- such language suggests the use multiple reactive substances since they are designed to indicate different temperatures (Page 7, Lines 29-32).

With respect to claim 22, Figures 1-3 depict the temperature indicating means as being positioned in the shoulder region. Furthermore, one of ordinary skill in the art at the time of the invention would recognize that Buckland envisioned a plurality of arrangements as long as the temperature indicating means was on the tire rubber itself, as opposed to being attached to the interior of the mold (Page 3, Lines 1-10). Lastly,

applicant ha snot provided a conclusive showing of unexpected results to establish a criticality for the claimed arrangement.

As to claim 29, the paint of Robert contains an inorganic pigment or opaque medium (Page 1, Lines 65-86).

With respect to claims 31-34 and 36-39, the paint of Robert includes a binder constituent, such as phenolic, silicon, or epoxide resin, that is dissolved or dispersed in a solvent (Page 1, Lines 50-55). These materials are seen to be "cross-linkable" materials. Furthermore, the language "low" temperature vulcanizing properties and "low" temperature polymerizing properties does not define over the binder materials noted above since the language comprises relative terms (anything can be viewed as low). A better way to define the binder might be to include the specific binder materials if such an embodiment is desired.

5. Claim 30 is rejected under 35 U.S.C. 103(a) as being unpatentable over Buckland, Robert, Jenke, and Kanakkanatt as applied in claim 29 above and further in view of Hetson (US 4,155,887, of record).

As detailed above, the temperature indicating paint of Robert includes an inorganic pigment. In this instance, the reference provides an exemplary use of "Permanent Blue" (Page 1, Lines 80-85). One of ordinary skill in the art at the time of the invention would have found it obvious to use of the well known inorganic pigments that are commonly used in paint formulations, such as titanium dioxide, calcium carbonate, silica, and sodium sulfate. Hetson provides one example in which the above noted inorganic pigments are alternatively described as being usable in paint

formulations (Column 6, Lines 57-65). Absent any conclusive showing of unexpected results, one of ordinary skill in the art at the time of the invention would have found it obvious to include any of the well known inorganic pigments in the paint formulation of Robert.

6. Claim 41 is rejected under 35 U.S.C. 103(a) as being unpatentable over Buckland, Robert, Jenke, and Kanakkanatt as applied in claim 19 and further in view of Kubota (US 3,607,498, (of record).

As detailed above, Buckland teaches a pneumatic tire construction having a temperature indicating paint applied to the outer surface of said tire and while the claimed paint is not expressly described by Buckland, Robert evidences the known use of temperature indicating paints comprising a dye and a reactive substance. In this instance, Robert recognizes the desire to sufficiently adhere the paint to a given surface and suggests the inclusion of a binder in the paint formulation (Page 1, Lines 45-55). Alternatively, it is known to apply the paint onto an adhesive that contacts the tire surface, as shown for example by Kubota (Column 3, Lines 40-50). One of ordinary skill in the art at the time of the invention would have found it obvious to apply the paint to an adhesive as it represents a suitable and accepted means to apply a paint to a tire outer surface and applicant has not provided a conclusive showing of unexpected results to establish a criticality for the use of an adhesive.

Allowable Subject Matter

7. Claims 23-28, 35, and 40 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Response to Arguments

8. Applicant's arguments with respect to claims have been considered but are moot in view of the new ground(s) of rejection.

It is initially noted that applicant's arguments with respect to Robert are persuasive with respect to claim 42 and as such, the previous rejection under 102 has been withdrawn. However, a new rejection in view of Fujita has been applied as set forth above.

As to the cured tire claims, the claims do not require a chemical reaction between the dye substance and the reactive compound (as is the case in claim 42). Applicant acknowledges that the mechanism of Robert is a physical reaction, which does satisfy the currently drafted claims that simply require the components to react.

With respect to Buckland, it is agreed that the reference is primarily directed to a method of indicating temperatures during curing, as opposed to temperatures in a cured tire. However, as set forth in the rejection above, the general use of temperature indicating paints in uncured and/or cured tire constructions is known, as shown for example by Jenke and Kanakkanatt. It is emphasized that these references specifically describe the use of such paints/compounds as a function of the tire being monitored (multiple temperatures/targeted applications are described within each reference). As

such, one of ordinary skill in the art at the time of the invention would have found it obvious to use the temperature indicating paint of Buckland in view of Robert in a cured tire construction.

Conclusion

9. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Justin R. Fischer whose telephone number is (571) 272-1215. The examiner can normally be reached on M-F (7:30-4:00).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Richard Crispino can be reached on (571) 272-1226. The fax phone

number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Justin R Fischer
Primary Examiner
Art Unit 1733

JRF
July 20, 2007